Six New Species of Bolivian *Hibiscus* (Malvaceae)

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ABSTRACT. Six species of *Hibiscus* sect. *Furcaria* (Malvaceae) from Bolivia are described as new, on the basis of character combinations not previously recognized in the group, from a study of the South American representatives of section *Furcaria*. A key is provided to distinguish the 16 species of *Hibiscus* (from all sections of the genus) known from Bolivia.

Key words: Bolivia, *Furcaria*, *Hibiscus*, Malvaceae, South America.

An ongoing study of the species of *Hibiscus* sect. *Furcaria* (Malvaceae) as they occur in South America (Krapovickas & Fryxell, in press) has resulted in the discovery of a number of undescribed South American species. This study is intended to augment the several recent taxonomic studies of this section of *Hibiscus* from various parts of the world (Craven et al., 2003; Menzel et al., 1983; Wilson, 1974, 1993, 1994, 1999; Wilson & Craven, 1995). The present communication presents those new species that are found in Bolivia, to make available the names for the forthcoming *Catálogo de las Plantas Vasculares de Bolivia* (Jørgensen et al., in prep.).

The following six new species of *Hibiscus* all pertain to *Hibiscus* sect. *Furcaria*. Section *Furcaria* is distinguished from the remainder of the large genus *Hibiscus* by distinctive calyx structure, in which the strong lateral ribs on the lobes are positioned on the margins and the midrib is often (not always) furnished with a nectary; it is also distinguished by a distinctive base chromosome number of $x = 18$ (cf. Wilson, 1994). Supporting characters include the often bifurcate elements of the epicalyx or involucel and the presence of foliar nectaries abaxially on one or more of the principal veins of the leaf. The following six new species are distinguished from other similar South American species of *Hibiscus* sect. *Furcaria* by having longer petioles of adult leaves (5 cm or more, rather than 2 cm or less).

Hibiscus adscensionis Fryxell & Krapovickas, sp. nov. TYPE: Bolivia. Santa Cruz: Ñuflo de Chávez, Ascención de Guarayos, 2 km N, 15°40′S, 63°5′W, 2–3 m altura, flores rosadas, orilla de monte, 26 Apr. 1977, *A. Krapovickas & A. Schinini 31722* (holotype, CTES; isotypes, LPB, NY). Figure 1.

Frutex 2–3 m altus, caule villoso pilis stellatis densis. Laminae foliorum pentagonae, base profunde cordata, apice acuto, utrinque pilis stellatis, densioribus pagina inferiori. Bracteolae involucellorum inaequaliter bifurcatae. Calyx hispidus, quam involucellum 1.5-plo longior. Corolla 6–8 cm longa. Fructus pilis stellatis parvis atque pilis simplicibus adpressis.

Shrubs 2–3 m tall; stems densely villous, with yellow, stellate hairs 1.5–2 mm long. Stipules subulate, 10–12 × 1 mm; petioles to 12 cm long and 3–4 mm wide, villous like the stems; leaf blades pentagonal, to 13.5 × 16.5 cm long (from the junction with the petiole), the base deeply cordate, with a sinus up to 6 cm deep, the margins somewhat crenate, the apex acute; reduced in size toward the branch apices, the blade rhomboidal with a serrate margin and on the same branch lanceolate; blade upper surface with primary and secondary nerves barely discernible, with ± erect stellate and some bifurcate hairs, leaving the epidermis visible; blade lower surface with primary and secondary nerves prominent, paler and with denser indumentum than on the rest of the leaf blade, which has hairs similar to those of the stem; nectary single, to 6 mm long, near the base of the midrib beneath. Flowers axillary, solitary, toward the base of the branches, in a leaf axil or on a short flowering branch; peduncle and pedicel combined ca. 2.5 cm long at anthesis, to 5.5 cm long in fruit and very short in the apical buds, articulate in the middle; the basal portion with indumentum similar to that of the stem and

the upper part with small whitish hairs and yellow bifurcate hairs to 3.5 mm long, some of which have a swollen base; bracts of the involucel 10 in number, 11–12 mm long, obscurely and unequally bifurcate; dorsally with rigid bifurcate hairs with the bases enlarged, somewhat larger toward the base and with smaller whitish hairs; the ventral face only with rigid bifurcate hairs; calyx with narrow triangular lobes, 9–10 × 4 mm, at anthesis 15–16 mm long, little if at all accrescent in fruit, with small, soft, whitish hairs, and rigid, yellow, bifurcate hairs ca. 2 mm long with a notably swollen base; nectaries located in the middle of the calyx lobes; corolla 6–8 cm long, reddish; staminal tube 2.5 cm long, with nearly sessile stamens inserted almost to the base; stigmas capitate, 1 mm diam., exceeding the staminal tube by 3 mm. Fruit subequal to the calyx, 12–15 × 12 mm, ovoid, covered by a continuous understory of very small white hairs, surmounted by large, rigid appressed hairs; seeds angular, striate, glabrous, 3.5 mm long.

Vernacular names. "Malva lila," "algodón de la pampa"; in the Tacana language: "yatsi he huapese sha sha."

Geographical distribution. It was initially collected at Ascención de Guarayos in Dept. Santa Cruz, for which reason we name it *Hibiscus adscensionis.* It was subsequently also found in Dept. La Paz.

The additional material, collected in virtually the same locality as the type, has peduncles articulate almost at the base. The terminal inflorescences appear leafless, but consistently have the scars of a leaf and two stipules. *Hibiscus adscencionis* is most similar to *H. conceptionis,* from which it differs in the characters given in the key.

Paratypes. BOLIVIA. **La Paz:** Iturralde, Ixiamas Tacana, 7 July 1995, *Bourdy 1479* (CTES). **Santa Cruz:** 6–12 km E Ascención de los Guarayos on road Aseradero La Chonta on rio Blanco [rio Agua Caliente], ca. 15°45′S, 63°1′W, 10 Aug. 1983, *M. Hopkins & al. 159* (CTES, NY, TEX); Ascención de Guarayos 9 km hacia el este, 30 Aug. 1985, *S. Beck 12289* (CTES, LPB); prov. Ñuflo de Chávez, Cantón Ascensión, Guarayo Este, 24 Sep. 1988, *Coimbra 1* (NY).

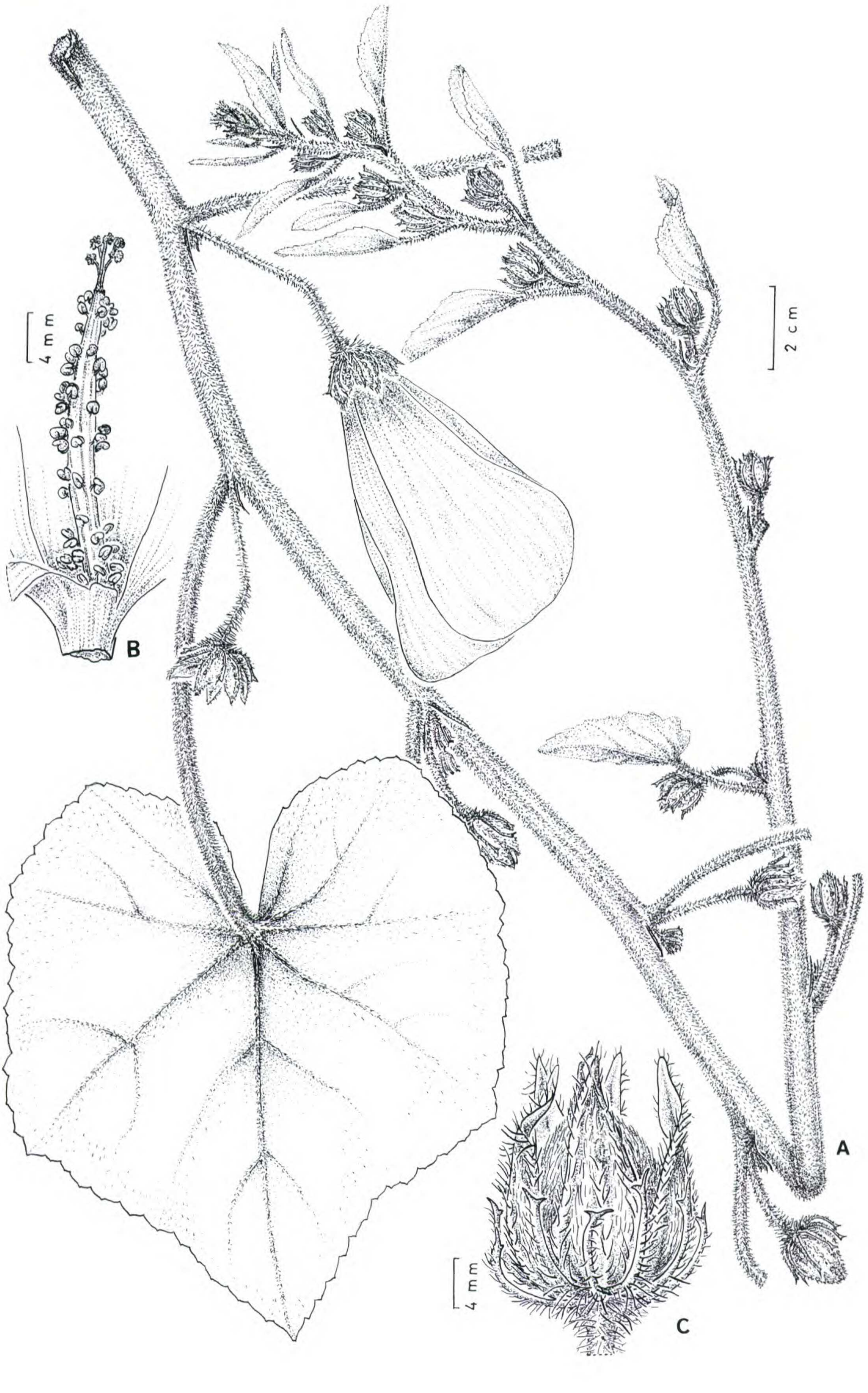
Hibiscus benensis Fryxell & Krapovickas, sp. nov. TYPE: Bolivia. Beni: Vaca Diez, 37 km E of Riberalta on road to Guayaramerín, 11°5′S, 65°45′W, 230 m, 21 May 1982, *J. C. Solomon 7717* (holotype, MO; isotypes, CTES, NY[2]). Figure 2.

Frutex 3 m altus, caule dense pubescenti pilis 0.5 mm longis. Laminae foliorum pentagonae vel leviter 5-lobatae, base cordata, apice acuminato, utrinque pilis stellatis densis. Racemi terminales. Bracteolae involucellorum bifurcatae. Calyx hispidus, quam involucellum 1.5-plo longior. Corolla 7.5 cm longa. Fructus pilis stellatis parvissimis atque pilis simplicibus adpressis 2 mm longis.

Shrubs 3 m tall, the stems densely pubescent, with hairs to 0.5 mm long, sparsely pubescent at the tips of fertile branches revealing the epidermis. Stipules deciduous, subulate, 3–4 mm long, on apical, floriferous nodes; petioles to 5 cm long, densely pubescent; leaf blades pentagonal or slightly 5-lobed, with lateral lobes acute and the central lobe acuminate, the blade (from the insertion of the petiole) 9.5 × 11.5 cm, the base cordate with a sinus 3 cm deep, the margins serrate; the blades reduced in size apically, to triangular with a horizontal base, ultimately diminishing acropetally to a bractiform aspect (almost an absence); blade upper surface with barely noticeable nervation, and with small, dense stellate hairs of ca. 0.5 mm diam.; blade lower surface yellowish, with more prominent, paler primary and secondary nerves, with a cover of very small white scales, and dense, erect, stellate hairs to 1 mm, with somewhat larger stellate hairs with swollen bases on the nerves; nectary solitary, 4–5 mm long, at the base of the midrib beneath, occurring even on the most greatly reduced leaves. Flowers solitary, axillary or grouped, forming an apical raceme; peduncle and pedicel combined 8 mm long at anthesis, to 11 mm long in fruit, articulate toward the base, with indumentum similar to that of the branch apices, with some simple or bifurcate hairs to 1 mm long; bracts of the involucel 9 in number, 8–9 mm long, clearly bifurcate with equal branches, with indumentum similar to that of the peduncle; calyx 13–14 mm long, not accrescent, the lobes 8 × 4–5 mm, triangular, with a dense cover of white scales and hispid with simple or bifurcate hairs 1 mm long with swollen bases, located principally on the primary nerves; nectaries purplish, located on the midribs at the level of the sinuses between the calyx lobes; corolla pale pink, 7.5 cm long; staminal column 3 cm long, with subsessile stamens along the entire length of the staminal column. Fruits subequal to the calyx, with a covering of minute, white stellate hairs, mixed with antrorsely appressed white hairs 2 mm long.

Hibiscus benensis is similar to *H. adscencionis* and *H. conceptionis* but differs in the pentagonal to 5-lobed leaves. It occurs in grassy savanna with shrubs and scattered, gnarled trees.

Paratype. BOLIVIA. **La Paz:** Iturralde, Puerto Muscoso, 190 m, 25 July 1995, *Helme & Kruger 644A* (CTES, LPB).


2 cm
4 mm
B
A
4 mm
C

Hibiscus commixtus Fryxell & Krapovickas, sp. nov. TYPE: Bolivia. La Paz: prov. Iturralde, Luisita, 13°5′S, 67°15′W, 180 m, Sabana húmeda, W del río Beni, 29 Feb. 1984, *S. G. Beck & R. Haase 10120* (holotype, LPB; isotypes, CTES, US). Figure 3.

Frutex ca. 2 m altus, caule pilis stellatis brevissimis sparsis. Laminae foliorum pentagonae, base cordata, apice obtuso vel subacuto, utrinque pilis stellatis erectis. Racemi terminales. Bracteolae involucellorum bifurcatae hispidae. Calyx hispidus, quam involucellum 1.5-plo longior. Fructus pilis stellatis brevis atque pilis simplicibus adpressis.

Shrubs ca. 2 m tall, the stems with small, sparse stellate hairs with horizontal radii, less than 0.5 mm diam., leaving visible the areolate epidermis, denser toward the apices of the branches, sometimes with some isolated, simple, rigid hairs to 1 mm long with swollen bases, and with a longitudinal line of dense, minute, recurved hairs. Stipules narrowly triangular, 5 mm long, somewhat darker and with fewer hairs than the stem; petioles to 9 cm long, with indumentum similar to that of the stem but somewhat denser; leaf blades ± pentagonal, 7 × 10 cm (from the insertion of the petiole), cordate with a sinus 2 cm deep, the apex obtuse to subacute and the margin obscurely crenate; gradually reduced in size toward the branch apices, from ovate to oblong to lanceolate, becoming only 15 mm long including the petiole; blade upper surface with primary and secondary nerves somewhat evident, with a covering of minute white scales with dark centers, with reddish glandular hairs and sparse, erect stellate hairs to 0.5 mm long; blade lower surface with primary, secondary, and tertiary nerves prominent, with somewhat smaller scales and somewhat larger stellate hairs than those of the upper surface; nectary solitary, 3 mm long, at the abaxial base of the midrib. Flowers in few-flowered terminal racemes; peduncle and pedicel combined 1 cm long at anthesis, to 3 cm long in fruit, articulate at the base, with dense pubescence of small, stellate hairs and with abundant simple, rigid hairs 1.5 mm long; involucellar bracts 10 to 11 in number, 12 mm long, arcuate, clearly bifurcate, hispid, with rigid bifurcate hairs with swollen bases, and with small, whitish, stellate hairs; calyx 18 mm long at anthesis, with triangular lobes 8 × 5 mm, with small stellate hairs, with glandular hairs, and on the margins and the central nerve with rigid bifurcate or stellate hairs with swollen bases; nectaries on the lobe midribs at the level of the sinuses between the lobes; in fruit the calyx accrescent to 28 mm long and with a reticulate epidermis; corolla lavender. Fruits 25 × 17 mm, oblong, with a dense cover of small stellate hairs and with rigid, antrorsely appressed hairs 2–3 mm long, these shorter toward the apex of the fruits; internally with long hairs on the lines of dehiscence; seeds 3.5 mm wide, rounded, glabrous.

The name of this species means "mixed" or "mingled" in reference to the combination of characters found in different species. The form of the leaf approximates the group of species related to *Hibiscus pohlii* Gürke and it has the involucel, the accrescent calyx, and the oblong fruit form of *H. furcellatus* Desrousseaux, *H. bifurcatus* Cavanilles, and *H. peruvianus* R. E. Fries. It differs from the widespread *H. furcellatus* in its sparsely (rather than densely) pubescent stems and leaves that are wider than long. It occurs in humid savannas.

Hibiscus conceptionis Fryxell & Krapovickas, sp. nov. TYPE: Bolivia. Santa Cruz: Ñuflo de Chávez, Estancia Novicia, ca. 30 km S de Concepción, 16°29′S, 62°12′W, 500 m, 1 May 1977, *A. Krapovickas & A. Schinini 32114* (holotype, CTES; isotypes, LPB, NY). Figure 4.

Frutex 2 m altus, caule villoso pilis stellatis. Laminae foliorum triangulares base cordata apice acuto vel acuminato, utrinque pilis stellatis, pagina inferiori densioribus. Inflorescentiae terminales. Bracteolae involucellorum non bifurcatae. Calyx hispidus, quam involucellum 1.5-plo longior. Corolla 8 cm longa. Fructus pilis stellatis parvis atque pilis simplicibus adpressis.

Shrubs 2 m tall, the stems villous, with stellate hairs 1–1.5 mm long, denser toward the apices of the branches, where there are also hairs with swollen bases. Stipules filiform, 6–9 mm long, caducous, with stellate hairs 1 mm long, similar to those of the stem; petioles to 6 cm long, with indumentum similar to that of the stem; blades of the basal leaves 7.5 × 9.5 cm, triangular, cordate, the sinus 2 cm deep, the apex acute or acuminate; leaves gradually reduced in size toward the apex of the branches, from cordate to truncate to cuneate; blade upper surface with the nerves scarcely evident, with erect stellate hairs ca. 1 mm long, ± dense but the epidermis visible; blade lower sur-

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Figure 1. *Hibiscus adscencionis* Fryxell & Krapovickas. —A. Flowering branch. —B. Dissected flower, showing staminal column and styles and stigmas. —C. Immature fruit, showing involucel and calyx. Drawn from *Krapovickas & Schinini 31722* (CTES).

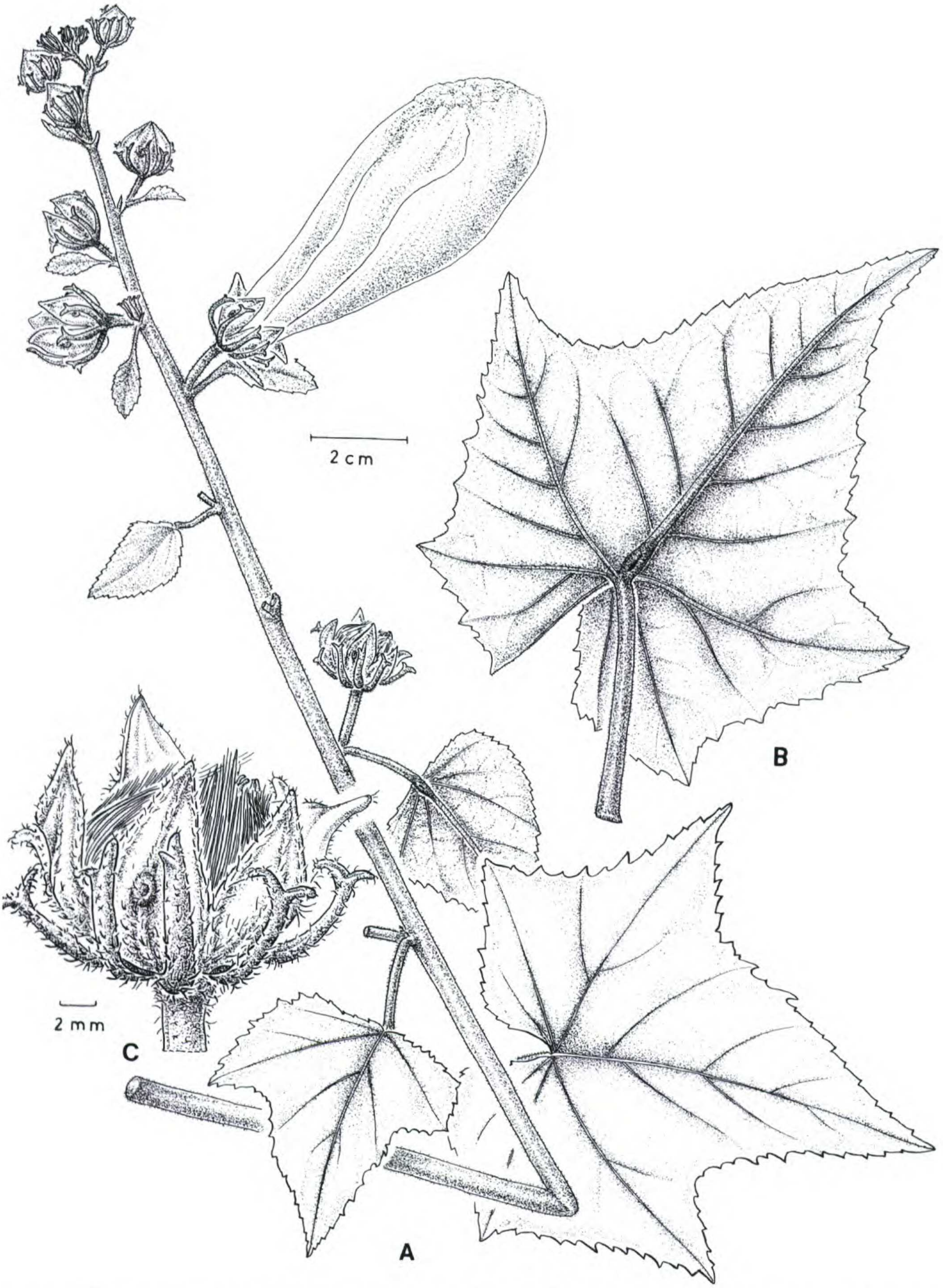

Figure 2. *Hibiscus benensis* Fryxell & Krapovickas. —A. Flowering branch. —B. Abaxial view of leaf. —C. Immature fruit, showing involucel and calyx. Drawn from *Solomon 7717* (CTES).

face with the primary nerves prominent, with pubescence similar but denser; a single nectary toward the abaxial base of the midrib in all leaves regardless of size. Inflorescences terminal, with leaves that diminish in size, ultimately lacking toward the inflorescence terminus; flowers solitary at each node, but toward the base a few short branchlets with 1 or 2 flowers; peduncle and pedicel com-

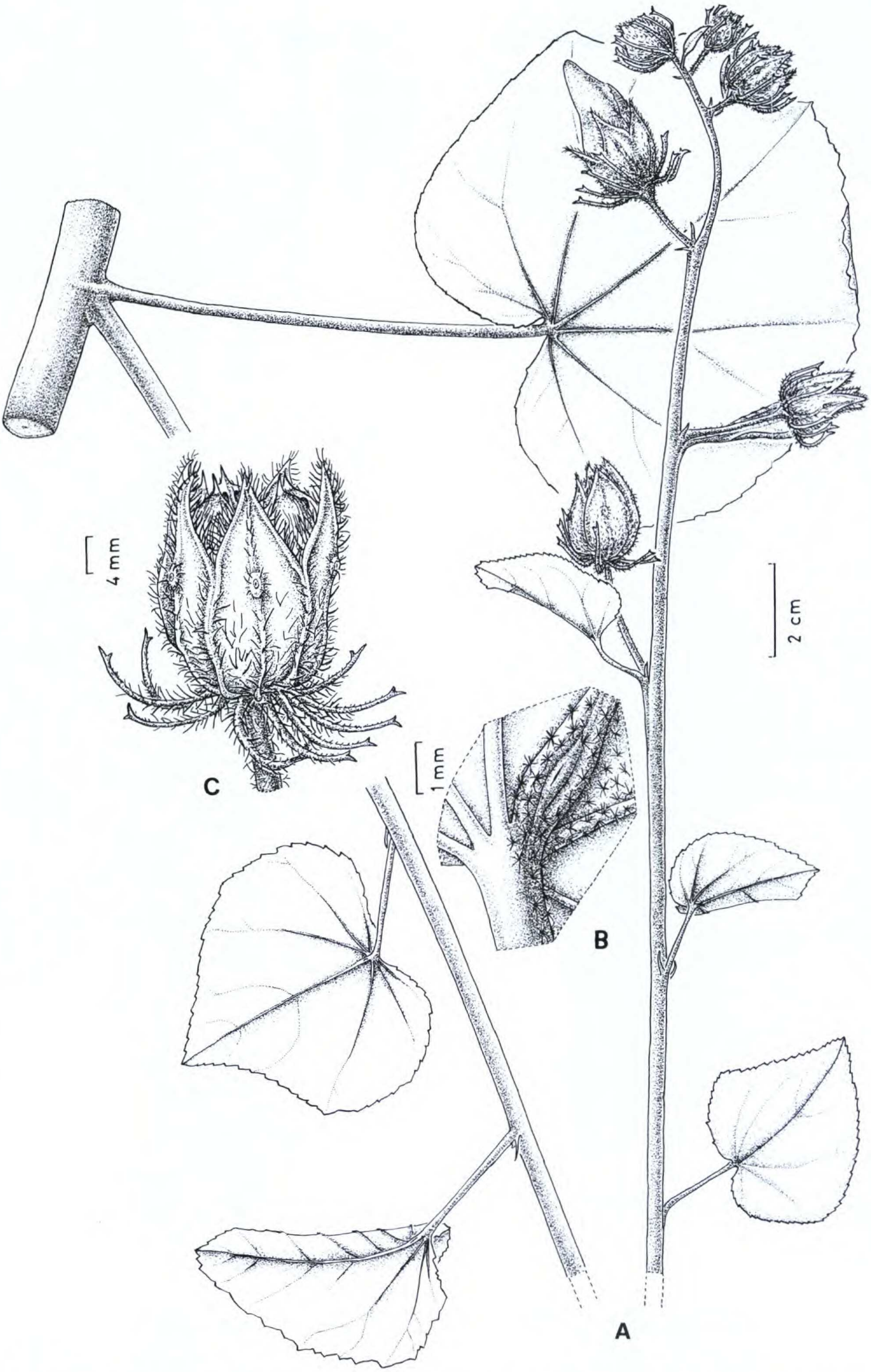

Figure 3. *Hibiscus commixtus* Fryxell & Krapovickas. —A. Flowering branch. —B. Foliar nectary on the abaxial side of leaf blade. —C. Mature fruit, showing involucel and calyx. Drawn from *Beck & Haase 10120* (CTES).

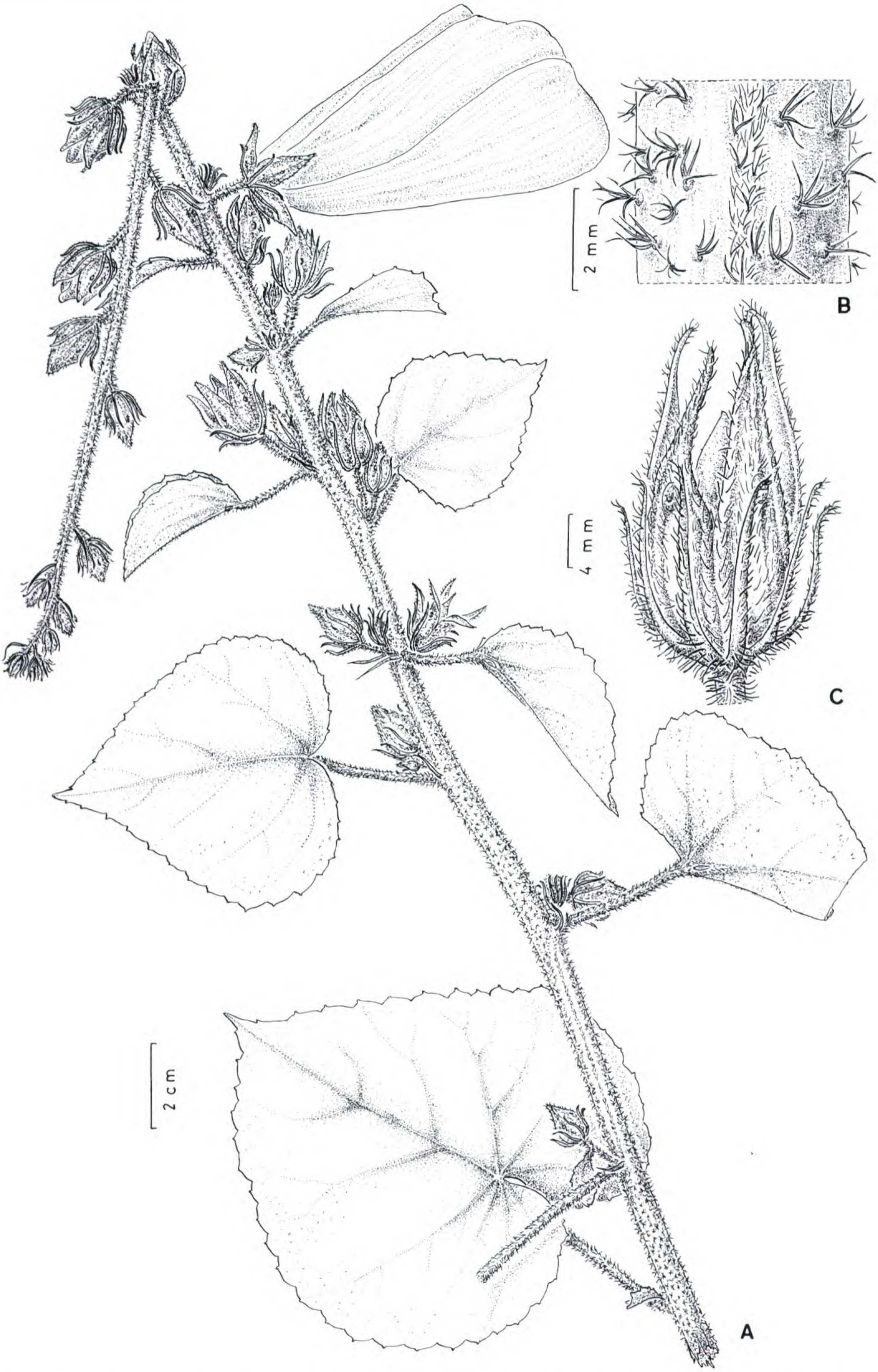

Figure 4. *Hibiscus conceptionis* Fryxell & Krapovickas. —A. Flowering branch. —B. Segment of stem, showing nature of pubescence. —C. Bud, pre-anthesis, showing involucel and calyx. Drawn from *Krapovickas & Schinini 32114* (CTES).

bined ca. 10 mm long at anthesis, accrescent to 25 mm in fruit; articulate near the base, with pubescence similar to stem, but slightly antrorse, intermixed with hairs with swollen bases like those of the bracteoles, also with some smaller, soft, whitish hairs; involucellar bracts 10 in number, 11–14 mm long, filiform, not bifurcate, with a recurved apex, with stellate hairs with enlarged bases that are antrorse and ca. 1 mm long; calyx 18–19 mm long at anthesis to 22 mm in fruit, more than half divided; lobes 16 × 5–6 mm, with hispid indumentum similar to the involucel, with nectaries located above the sinus, in the center of the lobes; corolla 8 cm long, rose-lilac. Fruits subequal to the calyx, ovoid, 16–20 × 11–12 mm, covered with a dense cap of minute hairs and with yellowish hairs ca. 2 mm long, antrorse and appressed, denser apically and on the dorsum of each carpel.

The specific epithet of this species is taken from the fact that the type was collected not far from the city of Concepción, capital of the first section of the province of Ñuflo de Chávez, in Santa Cruz, Bolivia. *Hibiscus conceptionis* is most similar to *H. adscencionis*, from which it differs by the characters given in the key. It occurs on forest margins.

Hibiscus ferreirae Fryxell & Krapovickas, sp. nov. TYPE: Brazil. Mato Grosso: Vila Bela, Posto Indigena Mamaindé, 25 km W de BR-174, km 449 (ca. 82 km SE de Vilhena), 470 m, 21 May 1985, *A. Krapovickas, J. F. Valls, C. Simpson & G. Silva 40148* (holotype, CEN; isotypes, CTES, K, LIL, MBM, NY, SP). Figure 5.

Frutex 2.5–3 m altus, caule pilis stellatis parvis sparsissimis atque lineis longitudinalibus densis pilorum minutorum. Laminae foliorum pentagonae vel leviter 5-lobatae discolores base cordata, apice lobi centralis acuto, pagina superiori pilis sparsis plerumque bifurcatis, pagina inferiori pilis stellatis densioribus, nectario solitario. Inflorescentia ramosa. Bracteolae involucellorum simplices. Calyx pilis hispidis brevis, quam involucellum duplo longior. Corolla 6–9 cm longa. Fructus oblongus pilis stellatis parvissimis atque pilis simplicibus adpressis 2 mm longis.

Shrubs 2.5–3 m tall, the stems with small, very sparse stellate hairs to 0.5 mm long, and with very narrow longitudinal lines of dense minute hairs. Stipules filiform, to 5 mm long, deciduous; petioles to 16.5 cm long, the indumentum somewhat denser than that of the stem, made up of stellate hairs to 1 mm long and with a longitudinal line of smaller denser hairs; leaf blades discolorous, to 16 × 20 cm (from the insertion of the petiole), the base cordate with a sinus 5 cm deep, the margin crenate, pentagonal to weakly 5-lobed, the central lobe acute to acuminate; in the apical inflorescence the leaves progressively reduced in size, becoming triangular with a truncate base, to lanceolate and only 1 cm long, including the petiole; blade upper surface with primary and secondary nerves somewhat evident, with sparse, simple, bifurcate, or sometimes stellate hairs 1 mm long; lower blade surface yellowish, with prominent primary and secondary nerves (paler than the tertiary nerves), with stellate hairs similar to those of the upper surface but denser; nectary solitary, 5–9 mm long, on the adaxial base of the midrib. Inflorescences branched and apical, with solitary flowers whose base has a floriferous branchlet to 15 cm long; peduncle and pedicel combined ca. 10 mm long at anthesis to 20 mm in fruit, articulate toward the base, somewhat accrescent, densely puberulent, with sparse, rigid, simple or bifurcate hairs 0.5 mm long; bracts of the involucel 9 in number, 6–7 mm long, slender, simple, with the apex somewhat recurved, with indumentum similar to that of the petiole; calyx not accrescent, 15 mm long, twice as long as involucel, the lobes triangular, 8 × 5 mm, puberulent with very few rigid, simple or bifurcate hairs 0.5 mm long on the nerves; nectary located on the central nerve a little above the sinus between the lobes, slightly swollen; corolla pink, 6–9 cm long. Fruit oblong, slightly exceeding the calyx, 16–17 mm long, with a covering of minute white stellate hairs, with appressed, antrorse hairs 2 mm long; seeds 4 mm long, angulate, glabrous, and striate.

We dedicate this species to the Portuguese botanist Alexandre Rodrigues Ferreira (1756–1815), who illustrated it in his unpublished work *Viagem Filosofica*, plate 67 (Bibl. Nac. Rio de Janeiro), an account of his trip to Amazonia between 1783 and 1792. On reconnoitering the Río Iténez [or Guaporé] from Belém to Cuiabá, Ferreira observed this species, of which he made a drawing with details sufficient for its identification as the species here described. It occurs in cerrado vegetation and on river banks.

Paratypes. BOLIVIA. Velasco, Estancia Flor de Oro, W side of Río Guapore (= Río Iténez), 13°33′S, 61°0′W, 28 June 1991, *M. Nee 41493* (CTES, NY, TEX, WIS); Velasco, Parque Nacional Noel Kempff M., Los Fierros, 200 m, 30 June 1993, *M. Saldias et al. 2808* (CTES, SCZ). BRAZIL. **Rondônia:** Riozinho, BR-364, 23 May 1985, *A. Krapovickas et al. 40168* (CEN, CTES, NY); Pimenta Buena, BR 364, km 188, 10 June 1984, *C. Cid et al. 4650* (K). **Mato Grosso:** Dardanelos, Rio Aripuaña, Clareira Jurema, 13 June 1974, *I. Cordeiro 25* (CTES); Pontes e Lacerda, MT 246, estrada para Vila Bela, 18 July 1986, *Emmerich 5718* (CTES, R).

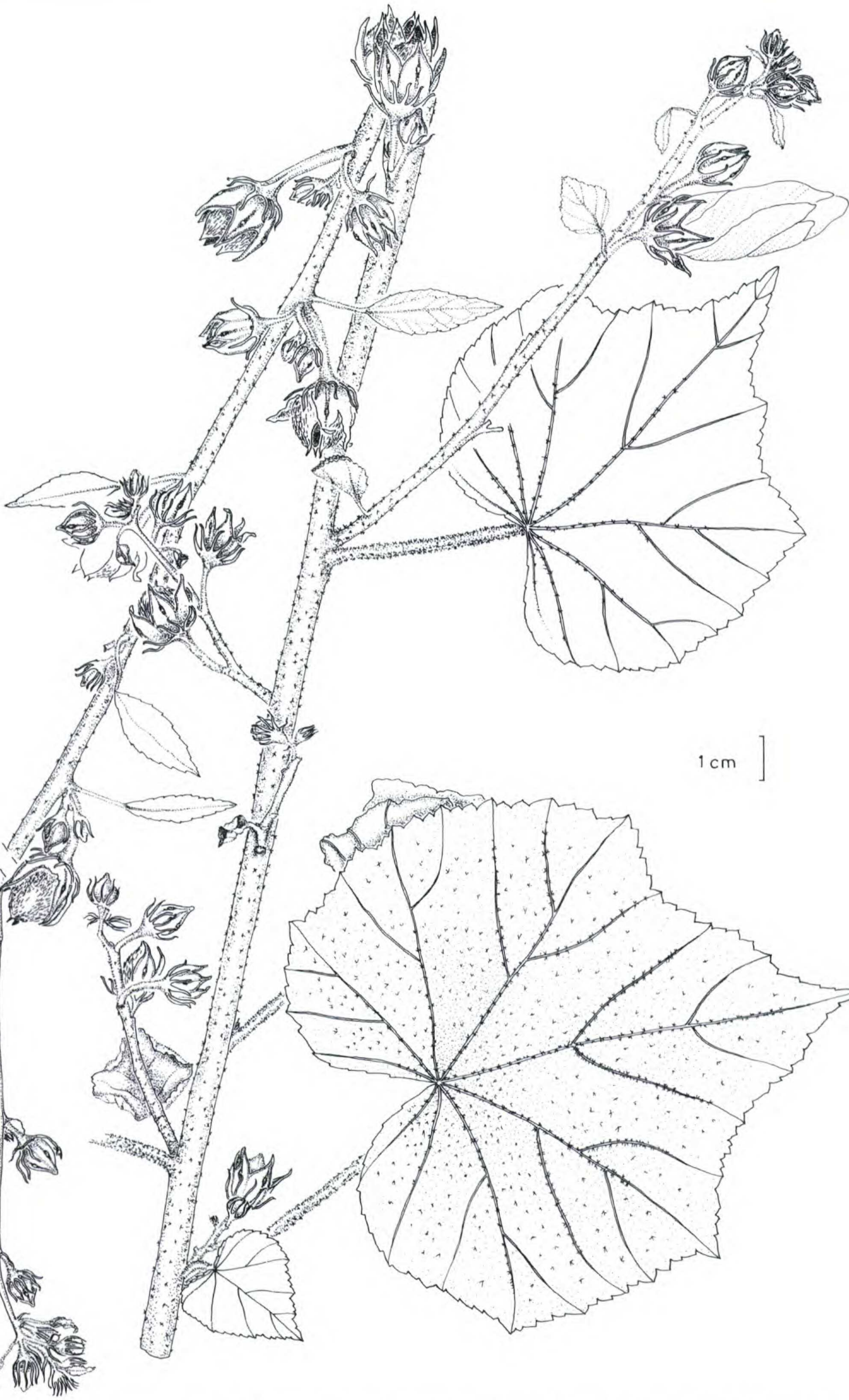

Figure 5. *Hibiscus ferreirae* Fryxell & Krapovickas. Flowering and fruiting branch. Drawn from *Krapovickas et al. 40148* (CTES).

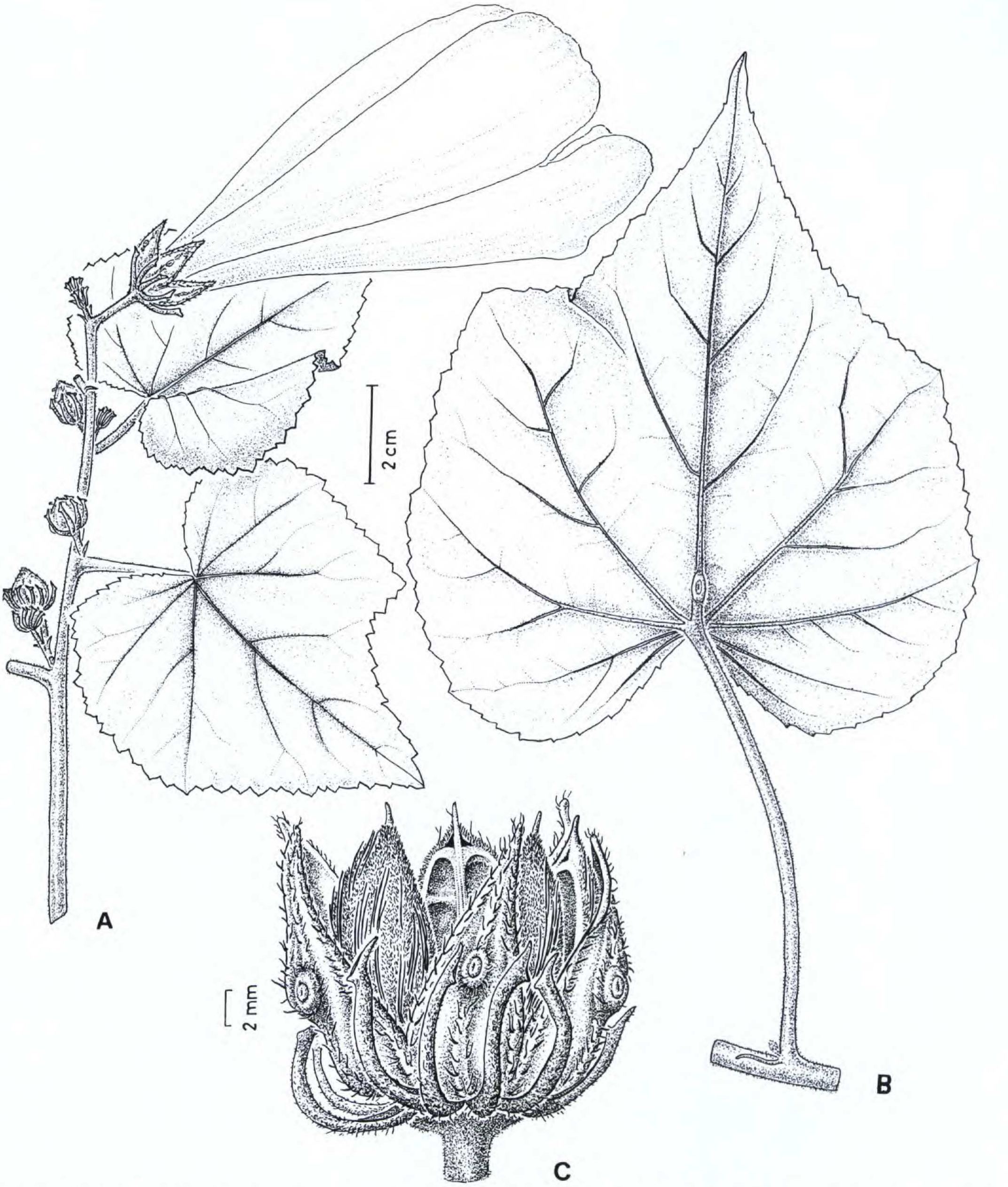

Figure 6. *Hibiscus paludicola* Fryxell & Krapovickas. —A. Flowering branch. —B. Abaxial view of leaf. —C. Mature fruit, showing involucel and calyx. Drawn from *Krapovickas et al. 40211* (CTES).

Hibiscus paludicola Fryxell & Krapovickas, sp. nov. TYPE: Brazil. Mato Grosso: 3.5 km SE de Barra do Bugres, camino a Cuiabá, 1 June 1985, *A. Krapovickas, J. F. Valls, C. Simpson & G. Silva 40211* (holotype, CEN; isotypes, CTES, K, MBM, NY). Figure 6.

Frutex 2 m altus, caule dense puberulo. Laminae foliorum pentagonae vix 3–5-lobatae base cordata, apice acuto utrinque pilis stellatis parvis, nectario solitario. Bracteolae involucellorum simplices vel vix bifurcatae. Calyx hispidus quam involucellum 1.6-plo longior. Corolla 8.5–9.5 cm longa. Fructus pilis parvis albis atque aliquot pilis simplicibus adpressis 2 mm longis.

Shrubs 2 m tall, the stems densely puberulent, with small stellate hairs to 0.5 mm. Stipules subulate, to 9 × 1 mm at the base; petioles to 10 cm long, with indumentum similar to stems; leaf blades to 12 × 11.5 cm (from the insertion of the petiole), pentagonal, weakly 3- to 5-lobed, the central lobe triangular, acute, the margin crenate-serrate, the base cordate with an open sinus 2 cm deep; blade

size diminishing acropetally to lanceolate and 1 cm long, including the petiole; blade upper surface with primary and secondary nerves somewhat prominent, with small, dense stellate, bifurcate, and a few simple hairs, less than 0.5 mm long; blade lower surface with the primary and secondary nerves prominent, pallid, with indumentum similar to that of the upper surface, but with somewhat longer hairs; nectary solitary, 5–6 mm long, near the base of the midrib. Flowers axillary, the peduncle and pedicel combined 8 mm long at anthesis, to 18 mm in fruit, articulate near the base, with indumentum similar to that of the stem; involucellar bracts 10 in number, 10 mm long, simple or with bifurcation barely indicated, with indumentum similar to that of the peduncle, and with some longer hairs on the margin; calyx not accrescent, 16 mm long, with triangular lobes 8 × 6 mm, densely puberulent between the ribs, these hispid, the hairs to 1.5 mm long; nectaries located just above the sinus between the lobes, on the central nerve of each lobe, not swollen; corolla pink, 8.5–9.5 cm long; staminal column 4 cm long with subsessile stamens at discrete levels along the entire length of the tube; stigmas exceeding the staminal tube by some 10 mm. Fruits subequal to the calyx, 15 × 15 mm, with a covering of minute, white stellate hairs, and with some yellowish simple hairs ca. 2 mm long, appressed and antrorse; seeds 5 mm long, angulate, striate, and with very small pectinate scales.

The name of this species alludes to its preference for flooded habitats.

Paratypes. BOLIVIA. **Santa Cruz:** Velasco, Parque Nacional Noel Kempff M., Cerro Pelao, 14°32′S, 61°29′W, 230 m, 25 jul. 1993, *R. Quevedo et al. 1107* (CTES, USZ). **Beni:** Yacuma, El Mirador, 1 km hacia Aguas Claras, sobre el río Benecito, 1160 M, 19 sep. 1933, *S. Beck & de Michel 20880* (CTES, LPB). BRAZIL. **Mato Grosso:** Pontes e Lacerda, Serra da Borda, 13 July 1985, *Souza 1279* (R). **Rondônia:** 7 km adentro de entroncamento a 10 km de Costa Marques, sentido de Rolim de Moura, 28 May 1990, *Skorupa et al. 830* (CEN, CTES). **Amazonas:** "Estrada do Estanho," road to Igarapé Preto, 60–62 km SE of Transamazon Hwy., 3 July 1979, *Calderón et al. 2757* (K, US); Humaita, fazenda do Flávio Ner, ao Sul da BR 319, km 658, 14 May 1980, *Janssen & Gemtschujnicov 383* (M).

Key to Bolivian Species of *Hibiscus*

1a. Calyx lobes with prominent ribs located on the margins and with midribs bearing a centrally located nectary; involucellar bracts sometimes bifurcate [sect. *Furcaria*].
  2a. Calyx and involucel finely puberulent; lateral ribs of adjacent calyx lobes not uniting below the sinus; fruits oblong . . . . . *Hibiscus peruvianus* R. E. Fries
  2b. Calyx ± hispid; lateral ribs of adjacent calyx lobes uniting at the sinus; fruits usually ovoid (except oblong in *H. furcellatus* and *H. commixtus*).
    3a. Foliage reddish, essentially glabrous; in cultivation . . . . . *Hibiscus acetosella* Welwitsch ex Hiern
    3b. Foliage green, ± pubescent (except glabrescent in *H. bifurcatus*); indigenous, commonly growing in wet habitats.
      4a. Plants sparsely aculeate, eventually glabrescent; leaves 3(to 5)-lobed; involucel exceeding the calyx at anthesis, the bracts notably bifurcate . . . . . *Hibiscus bifurcatus* Cavanilles
      4b. Plants variously pubescent but not aculeate; leaves unlobed or only weakly lobed; involucel shorter than calyx at anthesis, the bracts bifurcate or simple.
        5a. Calyx accrescent in fruit; fruits oblong; involucellar bracts manifestly bifurcate.
          6a. Stems densely stellate-pubescent, rarely also with a few hispid hairs; leaves angulate to weakly lobed, usually longer than wide . . *Hibiscus furcellatus* Lamarck
          6b. Stems sparsely and minutely stellate-pubescent; leaf blades wider than long . . . . . *Hibiscus commixtus* Fryxell & Krapovickas
        5b. Calyx not accrescent; fruits ovoid; involucellar bracts simple or barely bifurcate.
          7a. Inflorescence terminal and branched (paniculoid).
            8a. Stems densely puberulent; calyx puberulent but ribs hispid, these hairs to 1.5 mm long . . . . . *Hibiscus paludicola* Fryxell & Krapovickas
            8b. Stems sparsely puberulent; calyx puberulent only, the hairs on the ribs to 0.5 mm long . . . . . *Hibiscus ferreirae* Fryxell & Krapovickas
          7b. Inflorescence terminal and unbranched (racemoid).
            9a. Leaves often 5-lobed; involucellar bracts clearly bifurcate with equal branches . . . . . *Hibiscus benensis* Fryxell & Krapovickas
            9b. Leaves obscurely lobed or merely angulate.
              10a. Bracts of involucel unequally bifurcate; stems densely hirsute; fruits 12–15 mm long . . . . . *Hibiscus adscensionis* Fryxell & Krapovickas
              10b. Bracts of involucel simple; stems sparsely hirsute; fruits 16–20 mm long . . . . . *Hibiscus conceptionis* Fryxell & Krapovickas

1b. Calyx lobes with lateral ribs located away from the margins and lacking calyx nectaries; involucellar bracts never bifurcate [sections other than *Furcaria*].

11a. Bracts of involucel abruptly dilated to a reniform blade at apex; capsules globose to oblong, densely hispid, the hairs 2–3 mm long . . . . . *Hibiscus sororius* L.

11b. Bracts of involucel linear or lanceolate, sometimes (*H. schizopetalus*) greatly reduced; capsules oblong-ovoid to ovoid, variously pubescent.

12a. Leaves narrowly lanceolate or hastate (2–3 × as long as wide); bracts of involucel 10–12, hispid; styles and stigmas connate, the stigmatic zone a white 5-lobed disk; capsules oblong-ovoid, densely hispid, the hairs 3–5 mm long . . . . . *Hibiscus striatus* Cavanilles

12b. Leaves ± ovate (1–2 × as long as wide) or rhombic; bracts of involucel ca. 8, ± glabrous; stigmas distinct, the styles apically divergent; capsules ovoid (or seldom produced in *H. rosa-sinensis* and *H. schizocarpus*).

13a. Leaf blades as wide as long, 8–17 cm long; stems pubescent; flowers often aggregated apically . . . . . *H. mutabilis* L.

13b. Leaf blades longer than wide, often smaller than 8 cm long or wide; stems glabrous or glabrescent; flowers usually axillary.

14a. Leaf blades rhombic to weakly 3-lobed; calyx 1–1.5 cm long, minutely puberulent; petals 3–4 cm long; involucel subequal to calyx . . . . . *H. syriacus* L.

14b. Leaf blades ovate to lanceolate; calyx 1.5–4 cm long, essentially glabrous; petals 5–10 cm long; involucel shorter than calyx.

15a. Flowers ± erect, the pedicels shorter than the subtending leaves; petals erect, entire or slightly erose; involucel 1–2 cm long . . . . . *Hibiscus rosa-sinensis* L.

15b. Flowers pendent, the pedicels exceeding the subtending leaves; petals reflexed, complexly dissected; involucel minute (to 2 mm) . . . . . *Hibiscus schizopetalus* (Dyer) Hooker

Acknowledgments. The present study was supported in part by a Fulbright Scholar Award (to PAF in 1993) for study in Argentina that permitted the authors to collaborate at the Instituto Botánico del Nordeste in Corrientes, Argentina. We are grateful to Liliana Gómez for the excellent illustrations.

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